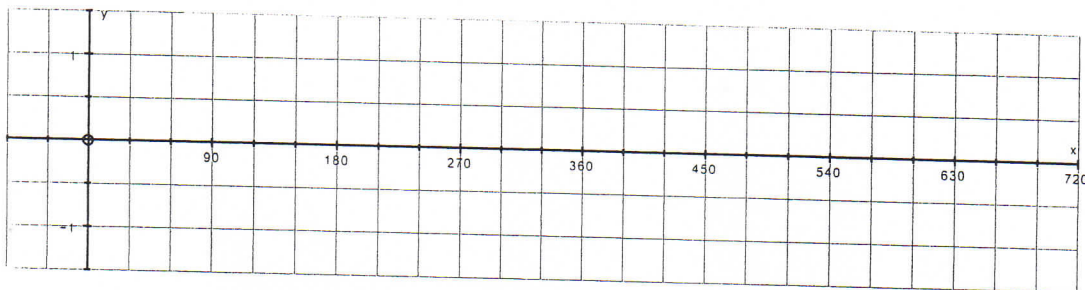


**Investigation: Graphs of Sine and Cosine Functions****Investigation 1:  $y = \sin x$** 

- a) Complete the table of values (round answers to 2 decimal places).

$x$ (in degrees)	$0^\circ$	$30^\circ$	$60^\circ$	$90^\circ$	$120^\circ$	$150^\circ$	$180^\circ$	$210^\circ$	$240^\circ$	$270^\circ$	$300^\circ$	$330^\circ$	$360^\circ$
Value of $\sin x$	0	0.50											

- b) Graph the function  $y = \sin x$  using the values from the table of values above.



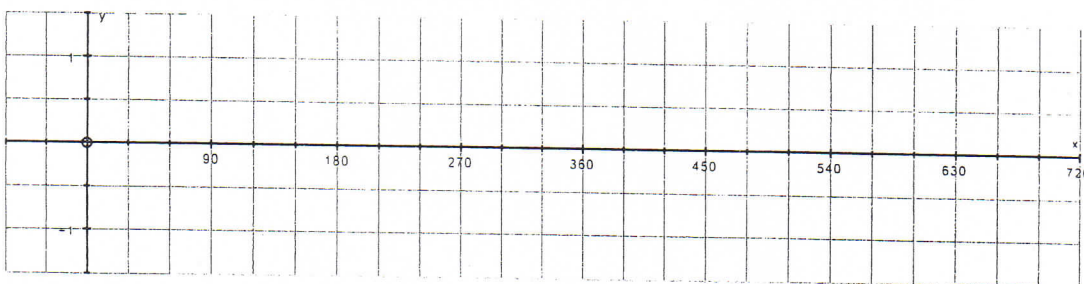
- c) For the graph of  $y = \sin x$  state the: (i) the maximum value \_\_\_\_\_ (ii) the minimum value \_\_\_\_\_ (iii) the amplitude \_\_\_\_\_
- d) Given that the function  $y = \sin x$  is periodic, sketch a continuation of the graph from  $360^\circ$  to  $720^\circ$ .
- e) What is the period of the graph  $y = \sin x$ ? \_\_\_\_\_

**Investigation 2:  $y = \cos x$** 

- a) Complete the table of values (round answers to 2 decimal places).

$x$ (in degrees)	$0^\circ$	$30^\circ$	$60^\circ$	$90^\circ$	$120^\circ$	$150^\circ$	$180^\circ$	$210^\circ$	$240^\circ$	$270^\circ$	$300^\circ$	$330^\circ$	$360^\circ$
Value of $\cos x$	1	0.87											

- b) Graph the function  $y = \cos x$  using the values from the table of values above.



- c) For the graph of  $y = \cos x$  state the: (i) the maximum value \_\_\_\_\_ (ii) the minimum value \_\_\_\_\_ (iii) the amplitude \_\_\_\_\_
- d) Given that the function  $y = \cos x$  is periodic, sketch a continuation of the graph from  $360^\circ$  to  $720^\circ$ .
- e) What is the period of the graph  $y = \cos x$ ? \_\_\_\_\_
- f) Compare the graphs of  $y = \sin x$  and  $y = \cos x$ . How are they the same? How are they different?